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FIELD MAINTENANCE PRINT SET

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TABLE OF CONTENTS

B-TC-RB730-0-1	FIELD MAINTENANCE PRINT SET MP01278
B-DD-RB730-0	11730 DISK CONTROLLER - DWG, DIRECTORY
K-PL-RB730-0-DBP	11730 DISK CONTROLLER - PARTS LIST
B-DD-M8388-0	INTEGRATED DISK CONTROLLER - DWG. DIRECTORY
D-UA-M8388-0-0	INTEGRATED DISK CONTROLLER - ASSEMBLY
K-PL-M8388-0-DBP	INTEGRATED DISK CONTROLLER - PARTS LIST
D-EC-5014452-0-0	INTEGRATED DISK CONTROLLER - ETCH CUT DWG.
D-BD-M8388-0-0	INTEGRATED DISK CONTROLLER - BLOCK DIAGRAM
D-CS-M8388-0-X (COMPLETE)	INTEGRATED DISK CONTROLLER - CIRCUIT SCHEM.
A-PL-7012938-0-0	UNIT SELECT PLUG KIT

UNIT VARIATIONS COVERED BY THIS PRINT SET
RB730-00

RB73Ø

Field Maintenance Print Set

Digital Equipment Corporation

PRINT SET ORDER NO. MP01278

SIZE B | CODE TC | NUMBER RB730-0-1 | REV. A

REVISIONS		
REV		
CHG. NO.		
DATE		

USED ON OPTION/MODEL	
11730	

SHEET 1 OF 1

DRN.	A.ROCHA	DATE 16APR82
CHK'D	R.R.Nolan	DATE 20APR82
PROJ. ENG.	D.M.Landry	DATE 20APR82
FIELD SERV.	L.L.Hunter	DATE 21APR82

digital

TITLE: 11730 DISK CONTROLLER FIELD MAINT. PRINT SET

SIZE	CODE	NUMBER	REV.
B	TC	RB730-0-1	A

DIST.

DRB 124

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DRAWING DIRECTORY

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UNIT VARIATIONS

VAR	TITLE
RB730-00	11730 DISK CONTROLLER

REVISIONS
REV.
CHANGE NO.
CHK

USED ON OPTION/MODEL
11730

SHEET 1 OF 2

DRN. A.ROCHA	DATE 16APR82	
CHK'D. A.Morin	DATE 20APR82	
PROJ. ENG. D.M.Landry	DATE 20APR82	
PROD. S.A.Castigline	DATE 21APR82	

TITLE
digital
11730 DISK CONTROLLER

SIZE	CODE	NUMBER	REV
B	DD	RB730-0	A

DIST.

DRB 106A

FIND NO.	DRAWING NO.	DESCRIPTION	TYPE
1	MP01278	FIELD MAINTENANCE PRINT SET (MP)	-
	B-TC-RB730-0-1	FIELD MAINTENANCE PRINT SET (TC)	-
	B-DD-RB730-0	11730 DISK CONTROLLER - DWG. DIRECTORY	-
	K-PL-RB730-0-DBP	11730 DISK CONTROLLER - PARTS LIST	-
2	B-DD-M8388-0	INTEGRATED DISK CONTROLLER - DWG. DIRECTORY	-
	D-UA-M8388-0-0	INTEGRATED DISK CONTROLLER - ASSEMBLY	E/M
	K-PL-M8388-0-DBP	INTEGRATED DISK CONTROLLER - PARTS LIST	-
	D-BD-M8388-0-0	INTEGRATED DISK CONTROLLER - BLOCK DIAGRAM	-
	D-CS-M8388-0-X	INTEGRATED DISK CONTROLLFR - CIRCUIT SCHEM. (-IDCA THRU -IDCP)	E
	D-EC-5014452-0-0	INTEGRATED DISK CONTROLLER - ETCH CUT DWG.	E
3	A-PL-7012938-0-0	UNIT SELECT PLUG KIT - PARTS LIST	-

TYPE: E ELECTRICAL
M MECHANICAL
E/M ELECTRO/MECHANICAL

digital

TITLE 11730 DISK CONTROLLER

SHEET 2 OF 2 | SIZE B | CODE DD | NUMBER RB730-0 | REV A

DRB 108A

AUTOMATED BY PRTLST.33P(44) P A R T S L I S T SHEET A1 OF A1

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QUANTITY PER VARIATION 00
1	1	B-DD-M8388-0)	M8388-00	RB730 IDC (INTEGRATED DISK CONTR	1
2	2	A-PL-7012938-0-0	7012938-00	70-12938 UNIT SELECT PLUG KIT	1

UNDERGOING CHANGE

REVISION HISTORY			BASIC PART NO: RB730
ENG	ECO NUMBER	REV	SECTION A OF A
	INITIAL	A	SECTION. VARIATION INDEX [A] 00 [B] [C] [D] [E] [F]

DRN: R.J. RILEY	DATE: 13-APR-82		D	I	G	I	T	A	L		
CHK'D: R.J. RILEY	DATE: 13-APR-82	TITLE PARTS LIST 11730 DISK CONTROLLER									
DES.ENG.: D LANDRY ~~B.MILLER~~	DATE: 13-APR-82										
RESP.ENG.: D.LANDRY ~~D. MILLER~~	DATE: 13-APR-82	DOCUMENT NUMBER									
MFG.ENG.: S CASTIGLIONE ~~????????????~~	DATE:	SIZE: K	CODE: PL	NUMBER: RB730-0-DBP	REV: A						
ASSEMBLY NUMBER:	TOP DOCUMENT NUMBER: #B-DD-RB730-0	FILE NAME: Z4258A.PLS	EDIT #: 3								

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SIZE	CODE	NUMBER	REV.
B	DD	M8388 - 0	A

DRAWING NO.	NO. OF SHTS.	PART NO.	DESCRIPTION	REVISIONS
			MODULE REVISION	A
B-DD-M8388-0	1		IDC	A
D-UA-M8388-0-0	2		IDC	A
D-EC-5014452-0-0	3		ETCH CUT DRAWING	A
D-MD-5014452-0-0	5		DRILL & ETCH DRAWING	A
K-PL-M8388-0-DBP	3		PL DATA BASE	A
K-PC-M8388-0-DBC			PC DATA BASE	B
K-CS-M8388-0-DBS			CS DATA BASE	A
		5014452	ETCHED BOARD	B
D-CS-M8388-0-IDCA	1	*	RL02 DATA SEPARATOR	A
D-CS-M8388-0-IDCB	1	*	DSR, ADRS CNTR, R00 STATUS	A
D-CS-M8388-0-IDCC	1	*	IDCE PLOAD OUTREG BO L	A
D-CS-M8388-0-IDCD	1	*	RL02 MFM ENCODING	A
D-CS-M8388-0-IDCE	1	*	FORTBUS INTERFACE	A
D-CS-M8388-0-IDCF	1	*	DAR, ECC, XCVRS	A
D-CS-M8388-0-IDCH	1	*	CONTROL STATUS REGISTER	A
D-CS-M8388-0-IDCJ	1	*	CLOCK SYNC & INTERRUPT	A
D-CS-M8388-0-IDCK	1	*	MICRO SEQUENCER	A
D-CS-M8388-0-IDCL	1	*	RL02, R90 DRIVERS	A
D-CS-M8388-0-IDCM	1	*	RL02, R80 RECEIVERS	A
D-CS-M8388-0-IDCN	1	*	DISK CABLE CONNECTORS	A
			3V DIVIDER NETWORK	
D-CS-M8388-0-IDCP	1	*	IDC BYPASS FILTER CAPS	A
D-BD-M8388-0-0	1	*	BLOCK DIAGRAM	A

NOTES: * CONTROL SOURCE IS DATA BASE
NO CONTROLLED PAPER ORGINALS EXIST

REVISIONS	REV.	CHG NO.	DATE

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digital

USED ON OPTION/MODEL
NEBULA

DRN.	Cady	8-10-81
CHK'D	Cady	8-10-81
ENG.	D. Miller DML	11/13/81
PROD.	D. B. Wyckoff	11/13/81

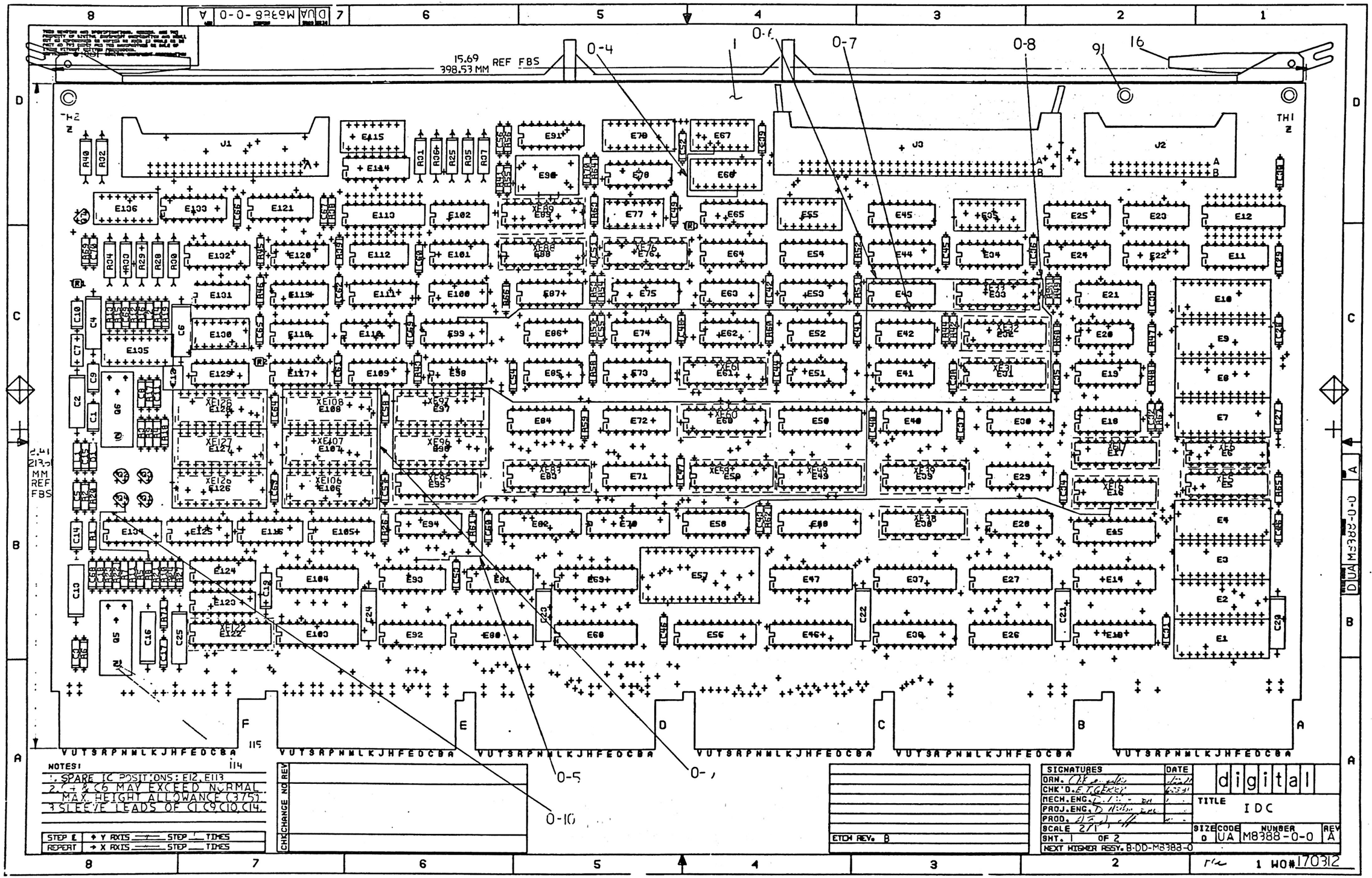
TITLE: I D C

SIZE	CODE	NUMBER	REV.
B	DD	M8388 - 0	A

SHEET 1 OF 1

DRB 128

TW



NOTES:
1. SPARE IC POSITIONS: E12, E113
2. C5 & C6 MAY EXCEED NORMAL MAX. HEIGHT ALLOWANCE (375)
3. SLEEVE LEADS OF C1, C9, C10, C14.

STEP E	↑ Y AXIS ——— STEP ___ TIMES	
REPEAT	→ X AXIS ——— STEP ___ TIMES	

CHK	CHANGE NO	REV

ETCH REV. B

SIGNATURES	DATE
DRW. CK	
CHK'D. E.T.G.	
MECH. ENG.	
PROJ. ENG. D.	
PROD.	

SCALE 2/1
SHT. 1 OF 2
NEXT HIGHER ASSY. 8-DD-M8388-0

digital

TITLE IDC

SIZE	CODE	NUMBER	REV
D	UA	M8388-0-0	A

1 WO# 170312

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REWORK INSTRUCTIONS:

WIRE ADDS SIDE 1

0-4 FROM E67-03 TO E66-06
0-5 FROM PTH NEAR E93-12 TO PTH BETWEEN R61 & C50
0-6 FROM E95-04 TO E33-18
0-7 FROM E33-09 TO E99-12
0-8 FROM E97-15 TO E33-11
0-9 FROM E109-02 TO E16-05
0-10 FROM COLLECTOR OF Q4 TO TOP OF R8

AUTOMATED BY PRTLST.3P(441) P A R T S L I S T SHEET A1 OF A3

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
1	1	D-MD-5014452-0-0	5014452-00	DRILL AND ETCH M8388	1	
2	2		1000022-00	270.0 MMF 100V 5%200PPM MICA	1	C7
3	3		1001776-00	1 MFD 35V 10% S.TANT	1	C19
4	4		1010646-00	.015 MFD 50V 2% M.POLYCARB	1	C6
5	5		1012784-00	.047 MFD 50V +80-20% CER	49	C3,C8,C17,C18,C26-C70
6	6		1013466-02	18.0 MMF 50V 5% CER	1	C11
7	7		1013466-08	680.0 MMF 50V 10% X7R CER	2	C5,C15
8	8		1013466-11	.22 MFD 50V +80-20% Z5U CER	4	C1,C9,C10,C14
9	9		1016628-00	7.0 MMF TO 30.0 MMF TRIMMER	1	C12
10	10		1017472-00	10 MFD 35V +50-10% AL EL	10	C2,C4,C13,C16,C20-C25
11	11		1111577-00	1N 4454 TR= 4NS PIV= 50 S	1	D1
12	12		1209941-02	HEADER 100 40POS RT ANGLE	1	J1
13	13		1209941-09	HEADER 26POS RT ANGLE RCPT	1	J2
14	104		1215006-04	SKT,IC 20PIN DIP TIN PLATE	19	XE33,XE49,XE76,XE5,XE6,XE16, CONT XE60,XE61,XE88,XE89,XE75,XE17, CONT XE32,XE83,XE39,XE59,XE122,XE38, CONT XE31
15	105		1215006-05	SKT,IC 22PIN DIP TIN PLATE	8	XE96,XE97,XE106-XE108, CONT XE126-XE128
16	14		1216832-04	HEADER 60POS WITH LATCHES	1	J3
17	15		1216988-02	HANDLE,MODULE,HEX TWO EJECTORS	1	
18	16		1300005-02	R NETWORK 13-6.8K 5.0 % 14PIN	2	E55,E67
19	17		1300005-04	R NETWORK 15-470 5.0 % 16PIN	1	E125
20	18		1300005-05	R NETWORK 13-82 5.0 % 14PIN	2	E115,E136
21	19		1300005-09	R NETWORK 15-56 5.0 % 16PIN	3	E35,E66,E79
22	20		1300229-00	100.0 .25 W 5.0 % CC	20	R3,R4,R9,R41-R44,R59-R71
23	21		1300295-00	330.0 .25 W 5.0 % CC	8	R26,R45,R48,R50,R52,R54,R56,R58
24	22		1300316-00	470.0 .25 W 5.0 % CC	2	R18,R23
25	24		1300365-00	1.0 K .25 W 5.0 % CC	2	R24,R38
26	25		1300398-00	1.80 K .25 W 5.0 % CC	1	R20

REVISION HISTORY			BASIC PART NO: M8388										
ENG	ECO NUMBER	REV	SECTION A OF A	DRN: J CASY	DATE: 17-NOV-81		D	I	G	I	T	A	L
---	INITIAL	A	SECTION.VARIATION INDEX [A] 00 [B] [C] [D] [E] [F] [H] [J] [K] [L] [M] [N]	CHK'D: E.T.GERRY	DATE: 17-NOV-81	TITLE	PARTS LIST						
				DES.ENG: DAVE MILLER	DATE: 17-NOV-81	IDC							
				RESP.ENG.: DAVE MILLER	DATE: 17-NOV-81	DOCUMENT NUMBER							
				MFG.ENG.: W WYCKOFF	DATE: 17-NOV-81	SIZE: K	CODE: PL	NUMBER: M8388-0-DBP				REV: A	
				ASSEMBLY NUMBER: D-UA-M8388-0-0	TOP DOCUMENT NUMBER:			FILE NAME: Z1290A.PLS				EDIT #: 12	

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AUTOMATED BY PRTLST.3P(44)

P A R T S L I S T

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION 00	REFERENCE DESIGNATOR
1	26		1300447-00	4.70 K .25 W 5.0 % CC	2	R12,R39
2	27		1301320-00	1.20 K .25 W 5.0 % CC	1	R19
3	28		1301424-00	680.0 .25 W 5.0 % CC	7	R46,R47,R48,R51,R53,R55,R57
4	29		1301781-00	82.0 .50 W 5.0 % CC	12	R25,R28-R37,R40
5	30		1302091-00	330.0 K .25 W 5.0 % CC	1	R27
6	31		1302612-00	1.78 K .25 W 1.0 % RN55D-F10	1	R14
7	32		1302871-00	1.21 K .25 W 1.0 % RN55D-F10	2	R7,R22
8	33		1302872-00	681.0 .25 W 1.0 % RN55D-F1	2	R1,R2
9	34		1302874-00	147.0 .25 W 1.0 % RN55D-F10	1	R15
10	35		1302941-00	14.70 K .25 W 1.0 % RN55D-F10	1	R16
11	36		1302956-00	196.0 .25 W 1.0 % RN55D-F10	1	R11
12	37		1303312-00	10.0 K .25 W 1.0 % RN55D-F10	1	R13
13	38		1305122-00	51.10 .25 W 1.0 % RN55D-F10	2	R5,R10
14	39		1305126-00	619.0 .25 W 1.0 % RN55D-F10	2	R8,R21
15	40		1309413-00	3.83 K .25 W 1.0 % RN55D-F10	1	R17
16	41		1310634-00	2.67 K .25 W 1.0 % RN55D-F10	1	R6
17	42		1503409-01	DEC6534B PNP 310MW SI 40 90 P	1	Q7
18	43		1513489-00	2N 4401 NPN 350MW SI 40 20	1	Q4
19	44		1513490-00	2N 4403 PNP 350MW SI-40 30	3	Q3,Q1,Q2
20	45		1603358-00	12.0 UH 10% 300MA #3012.0	2	L1,L2
21	46		1616653-00	DELAY= 50NS,10TAPS WITH TTLBU	1	E77
22	47		1616653-01	DELAY= 100NS,10TAPS WITH TTLBU	1	E130
23	48		1811660-12	OSCILLATOR, XTAL 8.200 MHZ	1	E90
24	49		1910532-00	74S00 NAND GATE-QUAD 2IN	2	E98,E110
25	50		1910534-00	74S04 INVERTER GATE-HEX 1I	3	E62,E85,E109
26	51		1910536-00	74S10 NAND GATE-TRIPLE 3IN	1	E51
27	52		1910542-00	74S64 A-O-I GATE 4-2-3-2	7	E40-E42,E52,E100,E101,E129
28	53		1910544-00	74S74 FF-D DUAL,EDGE TRIGG	4	E117,E131,E118,E119
29	54		1910549-00	74S158 MUX 1 OF 2 (QUAD)	1	E87
30	55		1910550-00	74S174 FF-D HEX	2	E73,E75
31	56		1910552-00	74S194 SHIFT REG. 4BIT RIGH	2	E92,E93
32	57		1910957-00	74S175 FF-D QUAD COMMON CLO	2	E99,E111
33	58		1911341-00	75113 DRIVER,LINE,DUAL,MA	11	E21,E23-E25,E43,E44,E53,E54,
					CONT	E114,E132,E133
34	59		1911579-00	8641 TRANSCEIVER,BUS,QUA	1	E81
35	60		1911675-00	74S138 DECODER/DEMUX 3-8 LIN	3	E58,E71,E72
36	61		1911712-00	74S51 AND-OR GATE-INVERT D	2	E20,E102
37	62		1911911-00	DEC 74S124 OSCILLATOR,DUAL VOLT	1	E135
38	63		1912388-00	74S02 NOR GATE-QUAD 2IN,PO	2	E86,E112
39	64		1912389-00	74S08 AND GATE-QUAD 2IN,PO	2	E63,E120
40	65		1912536-00	DEC 7805 VOLT REG,FIX +5V	1	Q6
41	66		1912647-00	LS257 MUX 1 OF 2 (QUAD)	2	E11,E22
42	67		1912728-00	74S251 MUX 1 OF 8 TRI-STA	3	E84,E94,E105
43	68		1912746-00	DEC 74S37 NAND GATE-QUAD 2IN	1	E74
44	69		1912837-00	LS123 ONE SHOT-DUAL,RETRIG	1	E123
45	70		1912847-00	LS157 MUX 1 OF 2(QUAD)	1	E64
46	71		1912872-00	LS377 FF-D 8BIT W/ENABLE	1	E70
47	72		1912951-00	DM 8556 COUNTER,BINARY,4BIT	5	E18,E19,E28-E30

D	I	G	I	T	A	L	TITLE	SECTION A OF A
							IDC	

SIZE	CODE	DOCUMENT NUMBER	REV
K	PL	M8388-0-DBP	A

AUTOMATED BY PRTLST.3P(44) P A R T S L I S T SHEET A3 OF A3

LINE	ITEM	DOCUMENT NUMBER	PART NUMBER	DESCRIPTION	QTY PER VARIATION CO	REFERENCE DESIGNATOR
[illegible]	75		1913017-00	3046 XSISTOR ARRAY,3 ISOL	1	E134
[illegible]	76		1913671-00	74S374 FF-D OCTAL TRISTATE	8	E13-E15,E27,E36,E37,E55,E59
[illegible]	77		1913777-00	LS240 DRIVER,LINE,OCTAL,T	1	E50
[illegible]	78		1913888-00	DC 102A EQUALS CHECKER 8BIT	1	E104
[illegible]	79		1914082-00	74S163 COUNTER,SYNCH UP/DOW	2	E116,E124
79	80		1914437-00	7905 VOLT REG,FIX -5V	1	Q5
80	81		1914972-00	3450 RECEIVER,LINE,QUAD,	6	E34,E45,E65,E78,E91,E121
81	82		1915101-00	DC007 ECC CHIP 28PIN	1	E57
82	83		1915193-00	LS244 DRIVER,LINE,OCTAL,T	4	E48,E80,E82,E103
83	84		1915218-00	LS245 TRANSCEIVER,BUS,OCT	4	E26,E46,E47,E68
84	85		1915697-00	RAM 256X4 TRI-STATE	8	E1-E4,E7-E10
85	53		23005K5-00	K5-01	1	E39
86	55		23006K5-00	K5-01	1	E38
87	87		23013K4-00	K4-01 PAL,ARRA	1	E6
88	88		23014K4-00	K4-01 PAL,ARRA	1	E17
89	107		23015K5-00	K5-01	1	E59
90	93		23016K4-00	K4-01 PAL,ARRA	1	E61
91	4		23023D2-00	D2-01	1	E127
92	86		23024D2-00	D2-01	1	E107
93	108		23025D2-00	D2-01	1	E106
94	89		23025K4-00	K4-01 PAL,ARRA	1	E122
95	109		23026D2-00	D2-01	1	E108
96	90		23026K4-00	K4-01 PAL,ARRA	1	E32
97	110		23027D2-00	D2-01	1	E96
98	94		23027K4-00	K4-01 PAL,ARRA	1	E83
99	111		23028D2-00	D2-01	1	E128
100	112		23029D2-00	D2-01	1	E97
101	113		23030D2-00	D2-01	1	E126
102	95		23033K3-00	K3-01 PAL,REG, CONT	1	E5
103	96		23034K3-00	K3-01 PAL,REG, CONT	1	E89
104	99		23037K3-00	K3-01 PAL,REG, CONT	1	E60
105	101		23049J5-00	J5-01 PAL,LOGIC,CONT	1	E76
106	102		23050J5-00	J5-01 PAL,LOGIC,CONT	1	E49
107	104		23052J5-00	J5-01 PAL,LOGIC,CONT	1	E31
108	97		23061K3-00	K3-01 PAL,REG CONT	1	E16
109	100		23062K3-00	K3-01 PAL,REG CONT	1	E95
110	98		23064K3-00	K3-01 PAL,REG, CONT	1	R88
111	103		23066J5-00	J5-01 PAL,LOGIC,CONT	1	E33
112	114		9006556-00	NUT,HEX 4-40X1/4 AF X 3/	2	
113	115		9008301-01	SCREW,PAN,PHIL 4-40X 1/4 SS	2	
114	91		9009000-00	EYELET,ROLL FLANGE .121ODX .156	12	
115	92		9009149-00	PIN, STAKING, P.C. BOARD, .025 X	3	TP1-TP3
116	116		9105740-55	WIRE(WRAP)30AWG UL1423	A/R	
117	117		9107278-11	TUBING,THIN WALL,.042ID UL	A/R	

D	I	G	I	T	A	L	TITLE IDC	SECTION A OF A

SIZE	CODE	DOCUMENT NUMBER	REV
K	PL	M8388-0-DBP	A

LAYER 1

CS*ABCDEFHJKLMNPRS

RLO2

SIDE 1

digital

J1 E115 E91 E79 E67

E136

R80 J2

R80 J3 E25 E23 E12

M8388 50144528

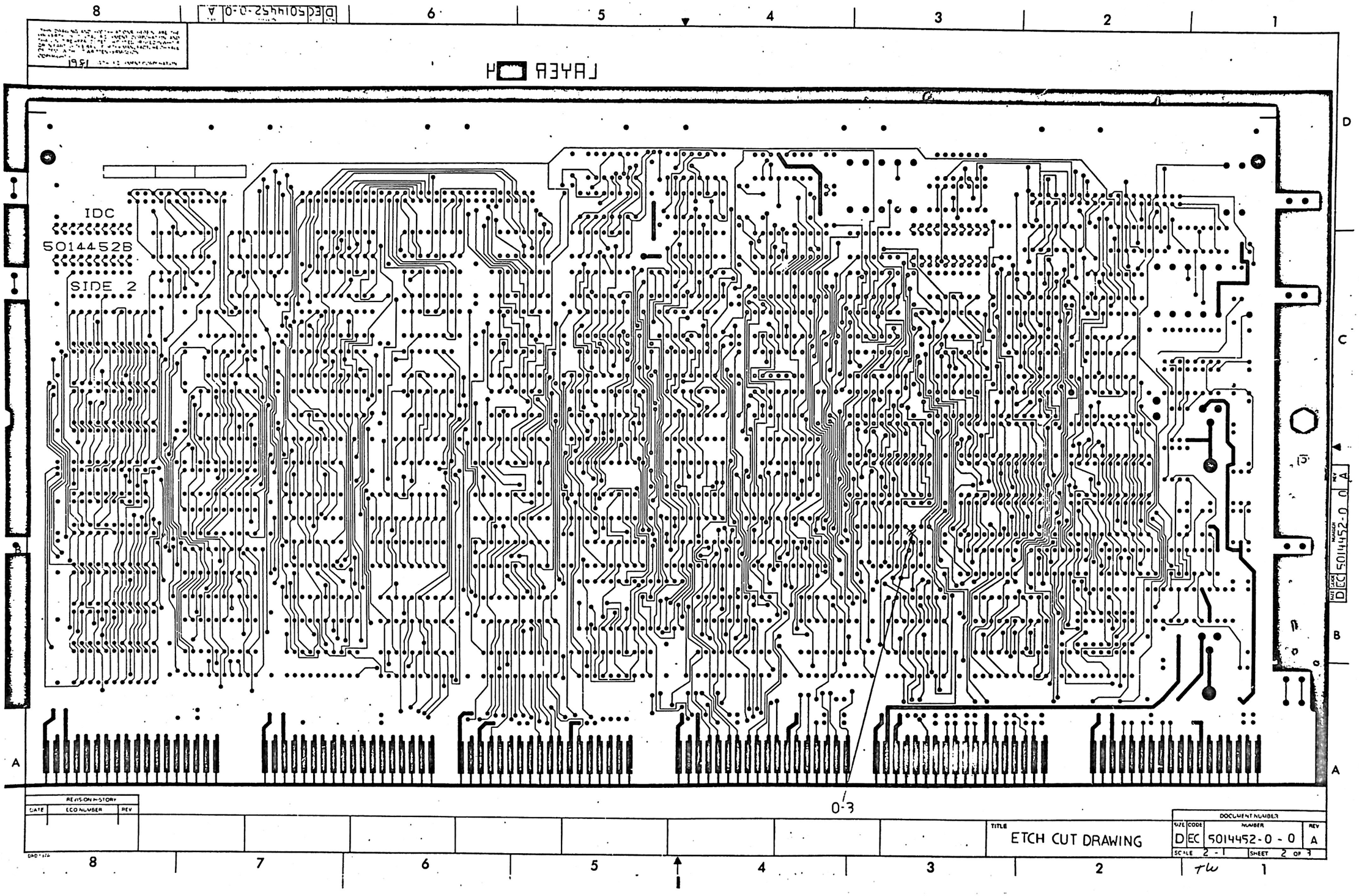
0-1

0-2

REVISION HISTORY		
REV	ECO NUMBER	DATE

DRN Thomas F Walsh	DATE 7/22/81	TITLE digital ETCH CUT DRAWING
CHKD Thomas F Walsh	DATE 7/22/81	
DES ENG D Miller DEC	DATE 7/23/81	
MFG ENG D Miller DEC	DATE 7/23/81	
MAINTENANCE DJ Dyckoff	DATE 7/23/81	DOCUMENT NUMBER: SIZE D, CODE EC, NUMBER 5014452-0-0, REV A; SCALE 2:1, SHEET 1 OF 3

5014452-0-0 REV A



REVISION HISTORY		
DATE	ECO NUMBER	REV

TITLE: ETCH CUT DRAWING

DOCUMENT NUMBER			
SIZE	CODE	NUMBER	REV
D	EC	5014452-0-0	A

SCALE 2-1 SHEET 2 OF 3

tw

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REWORK INSTRUCTIONS:

ETCH CUT SIDE 1:

0-1 AT E95-4 0-2 REMOVE "+" SIGNS

ETCH CUT SIDE 2:

0-3 AT E95-4

REVISION HISTORY		
DATE	ECO NUMBER	REV.

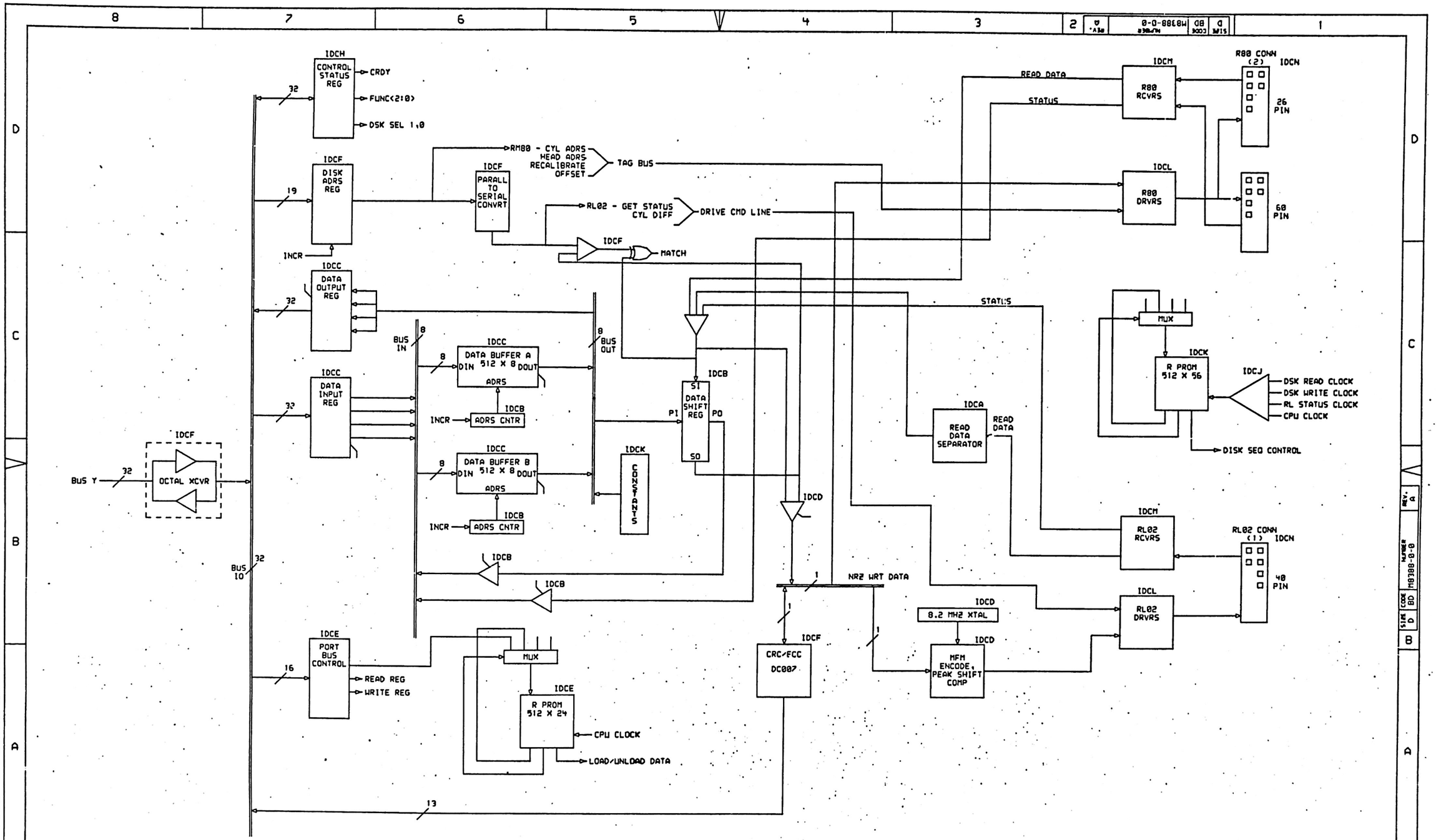
TITLE: ETCH CUT DRAWING

DOCUMENT NUMBER			
SIZE	CODE	NUMBER	REV.
D	EC	5014452-0-0	A

SCALE NONE SHEET 1 OF 1

DRD 127A

TW



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REVISIONS		
CHK	CHANGE NO.	REV

digital	DRN G.M.Hafner	DATE 22-DEC-81	ENG.	DATE
	CHK D.	DATE	BOARD LOCATION: SHEET 1 OF 1	
(362,1500)IDCBLK.DRW 18-DEC-81 15:27			NEXT HIGHER ASSEMBLY: B-DD-RB730-0	
FIRST USED ON OPTION/MODEL: NEBULA				

TITLE: INTEGRATED DISK CONTROLLER

SIZE	CODE	NUMBER	REV.
D	BD	M8388-0-0	A

G.M. HAFNER [1106,1500]IDCBLK.DPL, SCALE 2, 'D' RELEASE BOX
G.M. HAFNER IDCBLK.PLO[1106,1500] 22-DEC-81 12:39

IDCH RL02 H
IDCK UENB LOOP LOCK H
74S08 E120
IDCA +3V H
IDCK UMAINT H
IDCD WRITE DATA L
IDCK UMAINT L
IDCM RL READ DATA L
74S51 E102
74S74 E131
E130 100NS 10ns/TAP
IDCA +3V H
74S74 E117
IDCA UP H
IDCA UP L
74S64 E129
74S08 E120
IDCA DOWN H
IDCA DOWN L
CU1 +15V
C1 .22µF 50V
R1 681Ω 1%
R2 681Ω 1%
C2 10µF 35V
C3 .047µF 50V
7805 Q6
C4 10µF 35V
Q1 2N4403
R3 100Ω
Q2 2N4403
+15V
R6 2.67KΩ 1%
R5 51.1Ω 1%
+5.0V
R4 100Ω
IDCA UP L
E134 CA3046
R8 619Ω 1%
R7 1.21KΩ 1%
-5.0V
R9 100Ω
IDCA DOWN L
L1 12µH
TP1
R12 4.7KΩ
R13 10KΩ 1%
R14 1.78KΩ 1%
VCO 74S124 E135
C9 .22µF 50V
L2 12µH
C10 .22µF 50V
CLK
IDCA 8.2 MHZ VCO H
R69 100Ω
TP2
RANGE FREQ
EXT CAP
EN
@VCC @GND @GND
VCC
R11 196Ω 1%
C5 680PF 50V
R15 147Ω 1%
C6 .015µF 50V 2%
C7 270PF 100V
R16 14.7KΩ 1%
C8 .047µF 50V
R17 3.83KΩ 1%
C11 18PF 50V
C12 7-30PF 50V
TP3
R10 51.1Ω 1%
R19 1.2KΩ 5%
R18 470Ω
Q3 2N4403
R20 1.8KΩ
R21 619Ω 1%
R22 1.21KΩ 1%
Q4 2N4401
C15 680PF 50V
D1 1N4454
R23 470Ω
C13 10µF 35V
C14 .22µF 50V
EB2 -15V
C16 10µF 35V
C17 .047µF 50V
7905 Q5
-5.0V
+5.0V
R45 330Ω
R46 680Ω
IDCA +3V H
IDCJ SEL DSK CLK H
IDCA FAST LOCK L
IDCA DS CLK H
IDCA +3V H
74S74 E119
74S74 E118
IDCA DS DATA H
74S08 E118
74S02 E112
IDCH CRDY L
74S04 E109
(RL02 DATA SEPARATOR)

G.M. HAFNER, (1196,1508)IDCA.DPL, SCALE 2, "D" RELEASE BOX
G.M. HAFNER IDCA.PLOT 1196,1508) 10-DEC-81 17:14

REVISIONS		
CHK	CHANGE NO.	REV

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digital

DRN G.M. Hafner	DATE 10-DEC-81	ENG.	DATE
CHK'D.	DATE	BOARD LOCATION: SHEET 1 OF 1	
(367,1508)IDCA.DRW 10-DEC-81 16:52		NEXT HIGHER ASSEMBLY: B-DD-R8730-0	
FIRST USED ON OPTION/MODEL: 11/730			

TITLE: NEBULA INTEGRATED DISK CONTROL(IDCA)

SIZE	CODE	NUMBER	REV.
D	CS	M8388-0-IDCA	A

(R88 STATUS)

IDCK ULOAD DSR L
IDCF WRTCHK LOAD DSR L
74S08 E98
IDCB LOAD DSR H

DATA SHIFT REGISTER

SHFT REG 74S194 E93
IDCJ SER DATA IN H
BUS OUT 7 H
BUS OUT 6 H
BUS OUT 5 H
BUS OUT 4 H
SHFT 0IN
SHFT 3IN
0=HOLD 2 1=3IN+3 1 2=0IN+0 3=LOAD
IDCN +3VD H
IDCB LOAD DSR H
IDCK UCLR DSR L
IDCJ CURRENT CLK H
CLR
CLK
R0 IDCB DSR 7 H
R1 IDCB DSR 6 H
R2 IDCB DSR 5 H
R3 IDCB DSR 4 H

SHFT REG 74S194 E92
BUS OUT 3 H
BUS OUT 2 H
BUS OUT 1 H
BUS OUT 0 H
R0 IDCB DSR 3 H
R1 IDCB DSR 2 H
R2 IDCB DSR 1 H
R3 IDCB DSR 0 H

4X2 MUX 74LS257 E11
IDCM R88 WRITE PROTECT H
IDCM R88 SEC CNT 4 H
IDCM R88 DRIVE READY H
IDCK USEL R88 ST L
IDCK UENB R88 ST L
BUS IN 7 H
BUS IN 6 H
BUS IN 5 H
BUS IN 4 H

4X2 MUX 74LS257 E22
IDCM R88 SEC CNT 3 H
IDCM R88 ON CYLINDER H
IDCM R88 SEC CNT 2 H
IDCM R88 SEEK ERROR H
IDCM R88 SEC CNT 1 H
IDCM R88 PLUG VALID H
IDCM R88 SEC CNT 0 H
IDCM R88 FAULT H
BUS IN 3 H
BUS IN 2 H
BUS IN 1 H
BUS IN 0 H

DSR BUFFER

QUAD BUFFER 74LS244 E88
IDCB DSR 7 H
IDCB DSR 6 H
IDCB DSR 5 H
IDCB DSR 4 H
IDCB DSR 3 H
IDCB DSR 2 H
IDCB DSR 1 H
IDCB DSR 0 H
IDCK UENB DSR L
BUS IN 7 H
BUS IN 6 H
BUS IN 5 H
BUS IN 4 H
BUS IN 3 H
BUS IN 2 H
BUS IN 1 H
BUS IN 0 H

4X2 MUX 74S158 E87
IDCM R88 COMB SEC PLS L
IDCM RL SEC PLS L
IDCM R88 READ DATA L
IDCM RL DATA L
IDCM R88 SERVO CLK L
IDCD 4.1 MHZ CLK L
IDCM R88 READ CLK H
IDCA DS CLK H
IDCM RL02 H
R56 100Ω
IDCB SECTOR PLS H
IDCB READ DATA H
IDCB SYS CLK H
IDCB DISK CLK H

READ DATA H
DISK CLK L
DISK CLOCK H
CURRENT CLK H
SERIAL DATA IN
DSR,USEQ,8C

FIFOA ADRS CNTR HI

PAL 16R6 81H89 E17
IDCB FIFOB OVFLW L
IDCB FIFOB MAX L
IDCK USET FIFO OVF L
IDCE PCLR FIFO CNTR H
IDCM USEL FIFOA H
IDCM R88 H
IDCB FIFOA LO FULL H
IDCK UCLR FIFO CNTR H
CLOCK ENABLE
IDCB FIFOA OVFLW L
IDCB FIFOA ADRS 8 H
IDCB FIFOA ADRS 7 H
IDCB FIFOA ADRS 6 H
IDCB FIFOA ADRS 5 H
IDCB FIFOA ADRS 4 H
IDCB FIFO MAX L
IDCB FIFO OVFLW L

FIFOA ADRS CNTR LO

PAL 16R4 86IK3 E16
IDCM SET INT REQ H
IDCE RESET BR L
IDCM IE H
IDCM CROT H
IDCE PCLR FIFO CNTR H
IDCM USEL FIFOA H
CLOCK ENABLE
IDCB FIFOA ADRS 3 H
IDCB FIFOA ADRS 2 H
IDCB FIFOA ADRS 1 H
IDCB FIFOA ADRS 0 H
IDCB FIFOA LO FULL H
IDCB INT REQ DIM H

IDCE PCLR FIFO CNTR H
IDCN +3VC H
IDCE PINCR FIFO CNTR H
IDCE PSEL FIFOA H
WCSE PORT CLOCK L
74S64 E52
IDCK UINCR FIFO CNTR H
IDCM USEL FIFOA H
IDCJ CURRENT CLK L
R57 100Ω

FIFOB ADRS CNTR HI

PAL 16R6 81JK4 E6
IDCK USET FIFO OVF L
IDCE PCLR FIFO CNTR H
IDCM USEL FIFOB H
IDCM R88 H
IDCB FIFOB LO FULL H
IDCK UCLR FIFO CNTR H
CLOCK ENABLE
IDCB FIFOB OVFLW L
IDCB FIFOB ADRS 8 H
IDCB FIFOB ADRS 7 H
IDCB FIFOB ADRS 6 H
IDCB FIFOB ADRS 5 H
IDCB FIFOB ADRS 4 H
IDCB FIFOB MAX L

FIFOB ADRS CNTR LO

PAL 16R4 83JK3 E5
IDCE PCLR FIFO CNTR H
IDCM USEL FIFOB H
IDCE PCLR FIFO CNTR H
IDCN +3VC H
IDCE PINCR FIFO CNTR H
IDCE PSEL FIFOB H
WCSE PORT CLOCK L
74S64 E42
IDCK UINCR FIFO CNTR H
IDCM USEL FIFOB H
IDCJ CURRENT CLK L
IDCN +3VC H
R65 100Ω
CLOCK ENABLE
IDCB FIFOB ADRS 3 H
IDCB FIFOB ADRS 2 H
IDCB FIFOB ADRS 1 H
IDCB FIFOB ADRS 0 H
IDCB FIFOB LO FULL H

8-BIT CHECKER DC102 E104
+5.0V
R26 330Ω
IDCB READ DATA H
IDCB DSR 7 H
IDCB DSR 6 H
IDCB DSR 5 H
IDCB DSR 4 H
IDCB DSR 3 H
IDCB DSR 2 H
IDCB DSR 1 H
IDCB DSR 0 H
IDCK CMST 7 H
IDCK CMST 6 H
IDCK CMST 5 H
IDCK CMST 4 H
IDCK CMST 3 H
IDCK CMST 2 H
IDCK CMST 1 H
IDCK CMST 0 H
OUT
IDCB BYTE COMPARE H

BIT COUNTER

PAL 16R6 826K4 E32
IDCM R88 H
IDCF DAR 00 H
IDCF DAR 01 H
IDCF DAR 09 H
IDCF DAR 10 H
IDCM INH SSE L
IDCB READ DATA H
IDCJ CURRENT CLK H
CLOCK ENABLE
R68 100Ω
IDCB SSE H
IDCB BIT COUNT 16 H
IDCB BIT COUNT 8 H
IDCB BIT COUNT 4 H
IDCB BIT COUNT 2 H
IDCB BIT COUNT 1 H
IDCB MUX LO DAR L

IDCF SYNC SEEN L
IDCK UENB CLR BC H
74S00 E110

IDCM CRDY L
IDCK USET ISSE L
IDCJ CURRENT CLK H
74S74 E131
IDCB SSE H
74S00 E120
IDCB CSSE H

(DSR,ADRS CNTR,R88 STATUS)

G.M. HARMER (1108,1500)IDCB.DPL SCALE 2.0" RELEASE BOX
IDCB.PLO(1196,1500) 10-DEC-81 12:54

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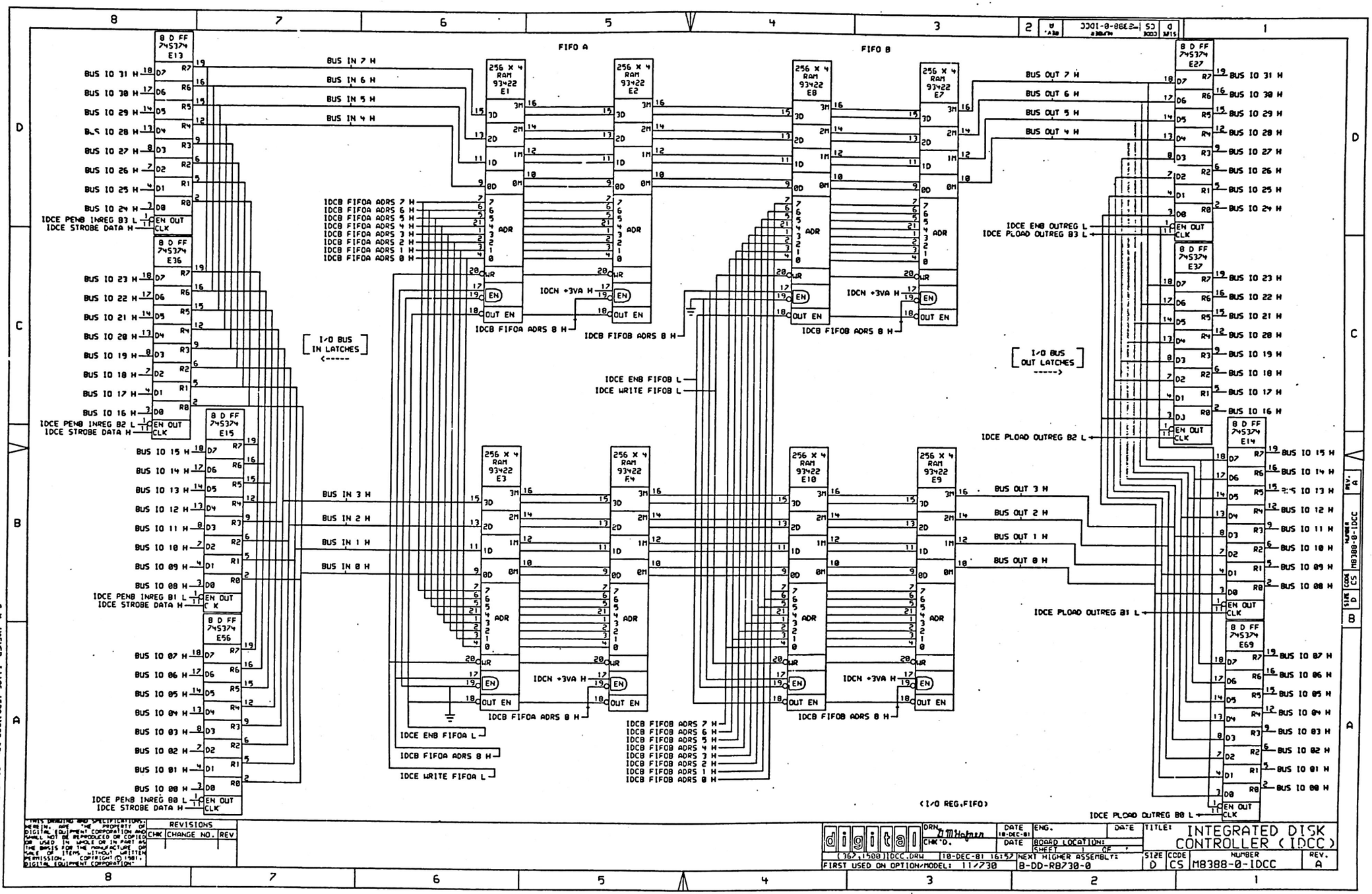
REVISIONS		
CHK	CHANGE NO.	REV

DRN	DATE	ENG.	DATE	TITLE:	INTEGRATED DISK CONTROLLER (IDCB)
G.M. Harmer	10-DEC-81				
CHK'D.	DATE	BOARD LOCATION:			
		SHEET OF			
(362,1500)IDCB.DRW 10-DEC-81 16:52		NEXT HIGHER ASSEMBLY:		SIZE D / CODE CS / NUMBER M8388-0-IDCB / REV. A	
FIRST USED ON OPTION/MODEL: 11/730		B-DD-R8730-0			



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REVISIONS		
CHK	CHANGE NO.	REV

DRN	DATE	ENG.	DATE
CHK'D.	DATE	BOARD LOCATION:	
		SHEET 1 OF 1	

TITLE: INTEGRATED DISK CONTROLLER (IDCC)

(362,1500)IDCC.DRW 18-DEC-81 16:57 NEXT HIGHER ASSEMBLY: B-DD-R8730-0

FIRST USED ON OPTION/MODEL: 11/730

SIZE	CODE	NUMBER	REV.
D	CS	M8388-0-IDCC	A

G.M. HARNER, [1186,1500]IDCC.DPL, SCALE 2, "D" RELEASE BOM
G.M. HARNER IDCC.PLO[1186,1500] 18-DEC-81 17:36

8.200 MHZ CRYSTAL OSC E90
CLK
R64 100Ω
IDCD 8.2 MHZ CLK H

MFM ENCODER
PAL 16R4 036K3 E88
IDCJ SER DATA IN H
IDCK UENB LOOP LOCK H
IDCK UDISK WRITE H
IDCB DSR 0 H
IDCJ SERIAL DAR H
IDCK UMAINT H
IDCJ SYNC SEC PLS H
IDCD 4.1 MHZ CLK L
D0 D1 D2 D3 D4 D5 D6 D7 CLOCK ENABLE
R R R R I/O I/O I/O I/O
IDCD WRT DATA 3 H
IDCD WRT DATA 2 H
IDCD WRT DATA 1 H
IDCD WRT DATA 0 H
IDCD NRZ WRT DATA H
IDCK UDISK WRITE H
IDCK UCHECK FIELD H
74S00 E98
R63 100Ω

PEAK SHFT COMP
PAL 16R4 034K3 E89
IDCD WRT DATA 3 H
IDCD WRT DATA 2 H
IDCD WRT DATA 1 H
IDCD WRT DATA 0 H
IDCD 8.2 MHZ CLK H
D0 D1 D2 D3 D4 D5 D6 D7 CLOCK ENABLE
R R R R I/O I/O I/O I/O
IDCD S1 L
IDCD S0 L
IDCD 4.1 MHZ CLK L
IDCD ALLOW 1 L
IDCD WRITE DATA L
IDCD WRITE DATA H
IDCD LOAD REG L
IDCD MFM DATA L
R70 100Ω

74S04 E62
E77 50NS 5ns/TAP 13 12 11 10 9 8

+5.0V
R27 330KΩ
C19 1uF 35V
IDCK URESET TIMER L
IDCH CRDY H
74LS123 E123
IDCD INIT L
74S00 E98
IDCH WRITE INHIBIT L
IDCD TIMER H

INIT FF
6 D FF 74S174 E73
D0 D1 D2 D3 D4 D5 CLR CLK
R0 R1 R2 R3 R4 R5
IDCH DRV RDY H
IDCH DRV ERR H
IDCB INT REQ DIN H
IDCH TIMEOUT H
IDCD INIT SYNC 1 H
IDCN +3VD H
IDCE P2 CLOCK L
IDCD DRIVE RDY H
IDCD DRIVE ERR H
IDCD INT REQ H
IDCD T/O SYNC H
IDCD INIT SYNC 1 H

IDCJ DCLO H
74S04 E109
IDCD DCLO L
IDCE CLEAR IDC L
74S00 E98

74S02 E112
IDCD JAM L
74S04 E85
IDCD JAM H
IDCD INIT H
IDCD INIT L

(RL02 MFM ENCODING)

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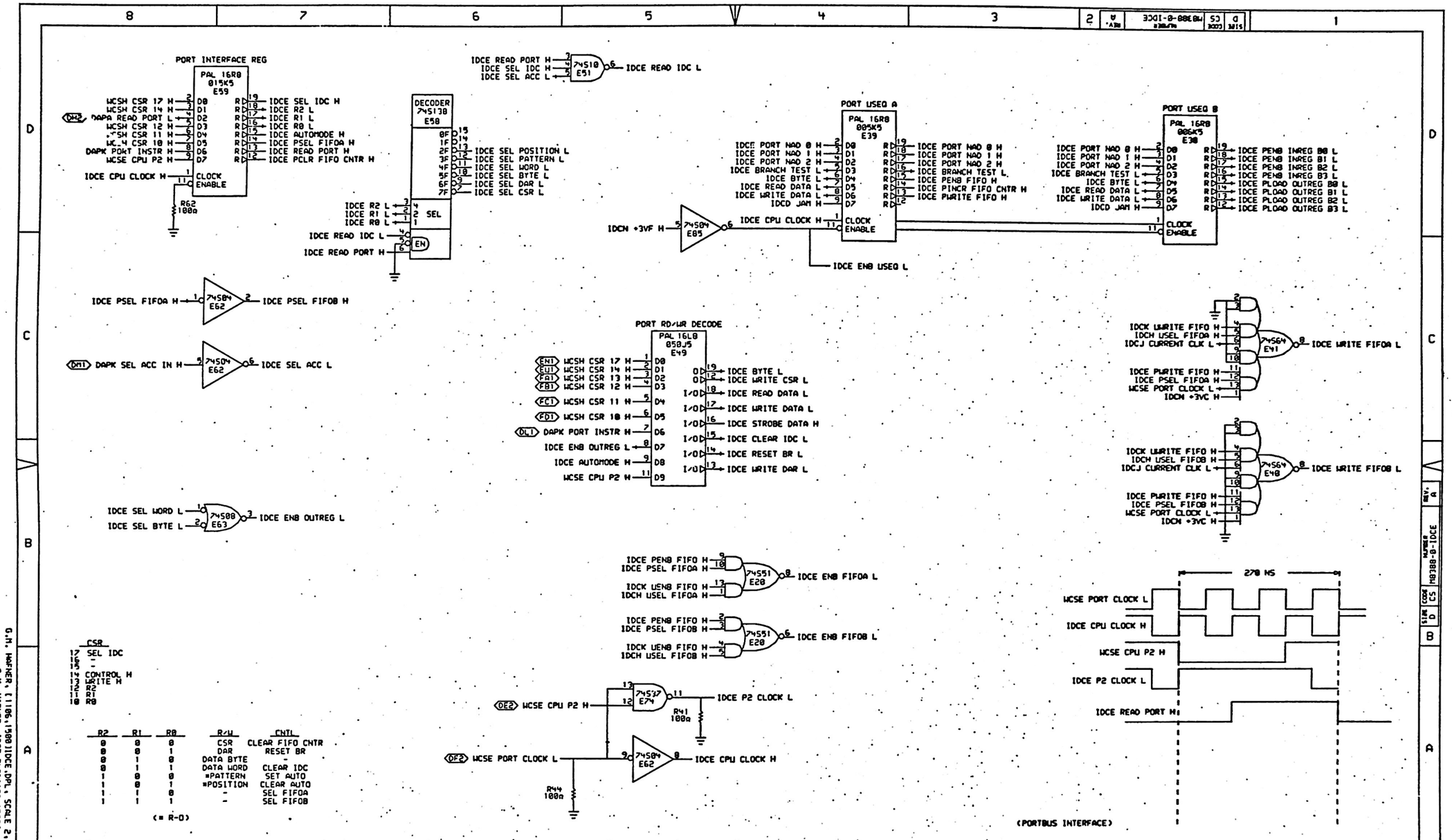
REVISIONS
CHK | CHANGE NO. | REV

digital
DRN: M.Hofmann
CHK'D.
DATE 10-DEC-81
ENG. DATE
BOARD LOCATION:
SHEET 1 OF 1
(35).1500]IDCD.DRW 10-DEC-81 16:57
FIRST USED ON OPTION/MODEL: 11/730
NEXT HIGHER ASSEMBLY: B-DD-RB730-0

TITLE: INTEGRATED DISK CONTROLLER (IDCD)
SIZE D | CODE CS | NUMBER M8388-0-IDCD | REV. A

D.M. HAFNER [1106,1500]IDCD.DPL, SCALE 2, "D" RELEASE BOM
D.M. HAFNER IDCD.PLO[1106,1500] 10-DEC-81 17:36



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REVISIONS		
CHK	CHANGE NO.	REV

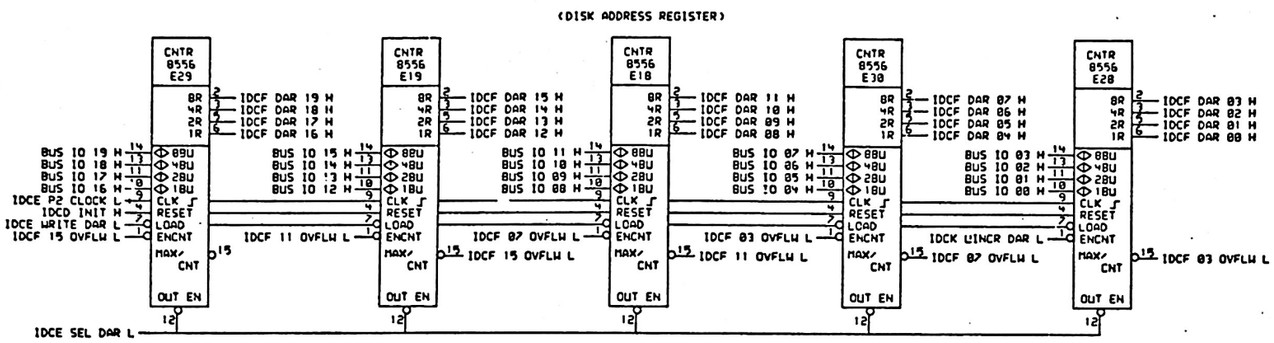
digital

DRN: M Hofmann
CHK'D:
DATE: 18-DEC-81
ENG.
DATE
BOARD LOCATION:
SHEET 1 OF 1
(367,1500)IDCE.DRW 18-DEC-81 16:58
NEXT HIGHER ASSEMBLY: B-DD-RB730-0
FIRST USED ON OPTION/MODEL: 11/730

TITLE: INTEGRATED DISK CONTROLLER (IDCE)

SIZE	CODE	NUMBER	REV.
D	CS	M8388-0-IDCE	A

G.M. HAFNER, [1186,1500]IDCE.DPL, SCALE 2, "D" RELEASE BOX
G.M. HAFNER IDCE.PLO[1186,1500] 18-DEC-81 17:36



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REVISIONS		
CHK	CHANGE NO.	REV

DRN	D.M.Hafner	DATE	10-DEC-81
CHK'D.		DATE	
ENG.		DATE	
BOARD LOCATION:		SHEET	1 OF 1
(362,1500)IDCF.DRW	10-DEC-81 16:58	NEXT HIGHER ASSEMBLY:	B-DD-R8730-0
FIRST USED ON OPTION/MODEL:	11/730		

TITLE: INTEGRATED DISK CONTROLLER (IDCF)

SIZE	CODE	NUMBER	REV.
D	CS	M8388-0-IDCF	A

G.M. HAFNER [1106,1500]IDCF.DPL, SCALE 2, "D" RELEASE BOM
G.M. HAFNER IDCF.PLT[1106,1500] 10-DEC-81 17:42

8 D FF 74LS377 E70
BUS IO 06 H
BUS IO 03 H
BUS IO 02 H
BUS IO 01 H
BUS IO 09 H
BUS IO 00 H
BUS IO 25 H
BUS IO 27 H
IDCE WRITE CSR L
IDCE P2 CLOCK L
IDCH IE H
IDCH F2 H
IDCH F1 H
IDCH F0 H
IDCH DS1 H
IDCH DS0 H
IDCH MAINT H
IDCH ASSI H
DR SEL LOGIC PAL 16L8 849J5 E76
IDCH R80 DRIVE READY H
IDCH RL DRIVE READY H
IDCH R80 FAULT H
IDCH RL DRIVE ERROR H
IDCH R80 SELECT ADRS 1 H
IDCH R80 SELECT ADRS 0 H
IDCH R80 PLUG VALID H
IDCK UDRV SEL 1 H
IDCK UDRV SEL 0 H
IDCH R80 ON CYLINDER H
IDCK USEL DRV H
IDCH DRV RDY H
IDCH DRV ERR H
IDCH DRIVE SEL 1 H
IDCH DRIVE SEL 0 H
IDCH RL02 H
8 LINE DRIVER 74LS240 E50
IDCH CRDY L
IDCH L RL02 H
IDCF CRC/ECC ERR L
IDCH OPI L
IDCE SEL CSR L
IDCH SSE FLAG L
IDCH INH SSE L
IDCH WRITE INHIBIT L
IDCE SEL CSR L
BUS IO 07 H
BUS IO 26 H
BUS IO 11 H
BUS IO 10 H
BUS IO 23 H
BUS IO 22 H
BUS IO 28 H
ONLINE REG PAL 16R6 016K4 E61
IDCH DRIVE SEL 1 H
IDCH DRIVE SEL 0 H
IDCK USET ONLINE L
IDCK UCLR ONLINE L
IDCD INIT H
IDCE WRITE CSR L
BUS IO 23 H
BUS IO 22 H
IDCK USET SSE L
IDCE P2 CLOCK L
R60 100a
IDCH ONLINE 3 L
IDCH ONLINE 2 L
IDCH ONLINE 1 L
IDCH ONLINE 0 L
IDCH SSE FLAG L
IDCH INH SSE L
IDCH ONLINE H
CSR SELECTED STATUS LATCH PAL 18P6 025K4 E122
IDCH DRV ERR H
IDCH DRV RDY H
IDCK USEL DRV H
BUS IO 28 H
BUS IO 29 H
IDCE WRITE CSR L
IDCH RL02 H
IDCE P2 CLOCK L
R21 100a
74S04 E62
IDCH L DRV ERR L
IDCH WRITE INHIBIT L
IDCH R80 FORMAT H
IDCH L DRV RDY H
IDCH L DRV ERR H
IDCH L RL02 H
IDCH R80 H
74S10 E51
IDCH COMP ERR H
IDCH L DRV ERR L
IDCF CRC/ECC ERR L
74S02 E86
IDCH OPI + DLT L
IDCF MISMATCH L
QUAD BUFFER 74LS244 E48
IDCH L DRV ERR H
IDCH ASSI H
IDCH MAINT H
IDCD INT REQ H
IDCH DS1 H
IDCH DS0 H
IDCE SEL CSR L
BUS IO 15 H
BUS IO 14 H
BUS IO 27 H
BUS IO 12 H
BUS IO 25 H
BUS IO 24 H
BUS IO 09 H
BUS IO 08 H
ATTN REG PAL 16R4 037K3 E60
IDCH DRIVE SEL 1 H
IDCH DRIVE SEL 0 H
IDCK USET ATTN L
IDCE WRITE CSR L
BUS IO 19 H
BUS IO 18 H
BUS IO 17 H
BUS IO 16 H
IDCK USET INT L
IDCD INT REQ H
IDCD INIT H
IDCE P2 CLOCK L
IDCE SEL CSR L
BUS IO 19 H
BUS IO 18 H
BUS IO 17 H
BUS IO 16 H
IDCH SET INT REQ H
UCMD
2 1 0
0 0 0 NOP
0 0 1 SET CRDY
0 1 0 SET OPI
0 1 1 SET DLT
1 0 0 SET XFER RQST
1 0 1 SET FIFOA
1 1 0 CHG FIFO
1 1 1 CLR I/O
CONTROL STATUS REG PAL 16R6 027K4 E83
IDCK UCMD 2 H
IDCK UCMD 1 H
IDCK UCMD 0 H
IDCD INIT L
DAPK XFER GRANT L
IDCE WRITE CSR L
BUS IO 07 H
IDCD TIMER H
IDCE P2 CLOCK L
R59 100a
74S04 E109
IDCH CRDY H
IDCH CRDY L
IDCH DLT L
IDCH TIMEOUT H
IDCH OPI L
IDCH USEL FIFOB H
IDCH XFER REQ H
IDCH OPI + DLT L
IDCH USEL FIFOA H
QUAD BUFFER 74LS244 E82
IDCH R80 FORMAT H
IDCH IE H
IDCF ECC STAT 1 H
IDCF ECC STAT 0 H
IDCH F2 H
IDCH F1 H
IDCH F0 H
IDCH L DRV RDY H
BUS IO 29 H
BUS IO 06 H
BUS IO 21 H
BUS IO 20 H
BUS IO 03 H
BUS IO 02 H
BUS IO 01 H
BUS IO 00 H
(CONTROL STATUS REGISTER)

G.M. HAFFNER [1186,1508]IDCH.DPL, SCALE 2, "D" RELEASE BOX
G.M. HAFFNER IDCH.PLO[1186,1508] 10-DEC-81 17:32

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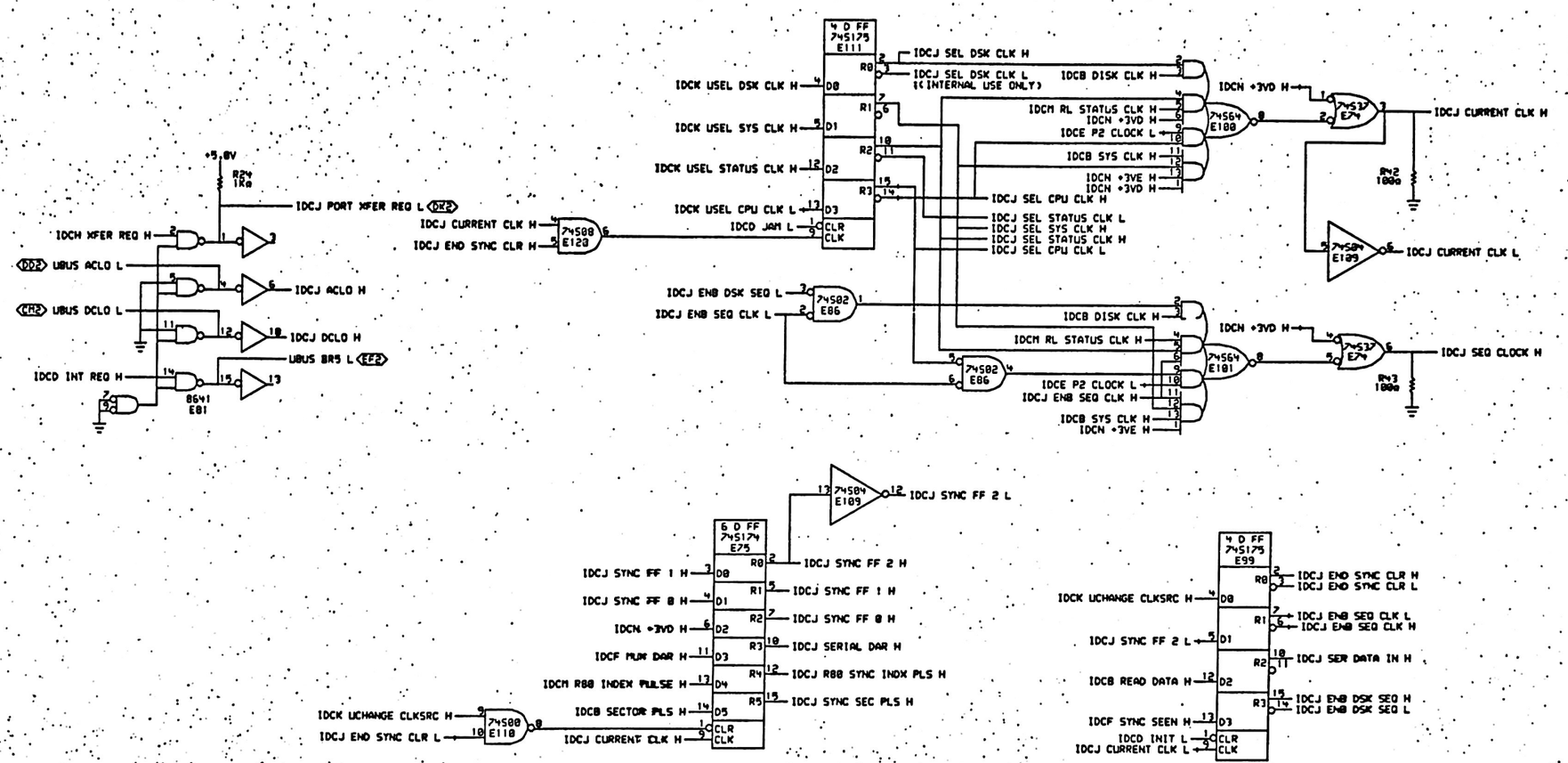
REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN: M.Haffner	DATE: 10-DEC-81	ENG.	DATE
CHK'D.	DATE	BOARD LOCATION: SHEET 1 OF 1	
[367,1508]IDCH.DRW	10-DEC-81 16:58	NEXT HIGHER ASSEMBLY: B-DD-R8730-0	
FIRST USED ON OPTION/MODEL: 11/730			

TITLE: INTEGRATED DISK CONTROLLER (IDCH)

SIZE	CODE	NUMBER	REV.
D	CS	M8388-0-IDCH	A



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REVISIONS		
CHK	CHANGE NO.	REV

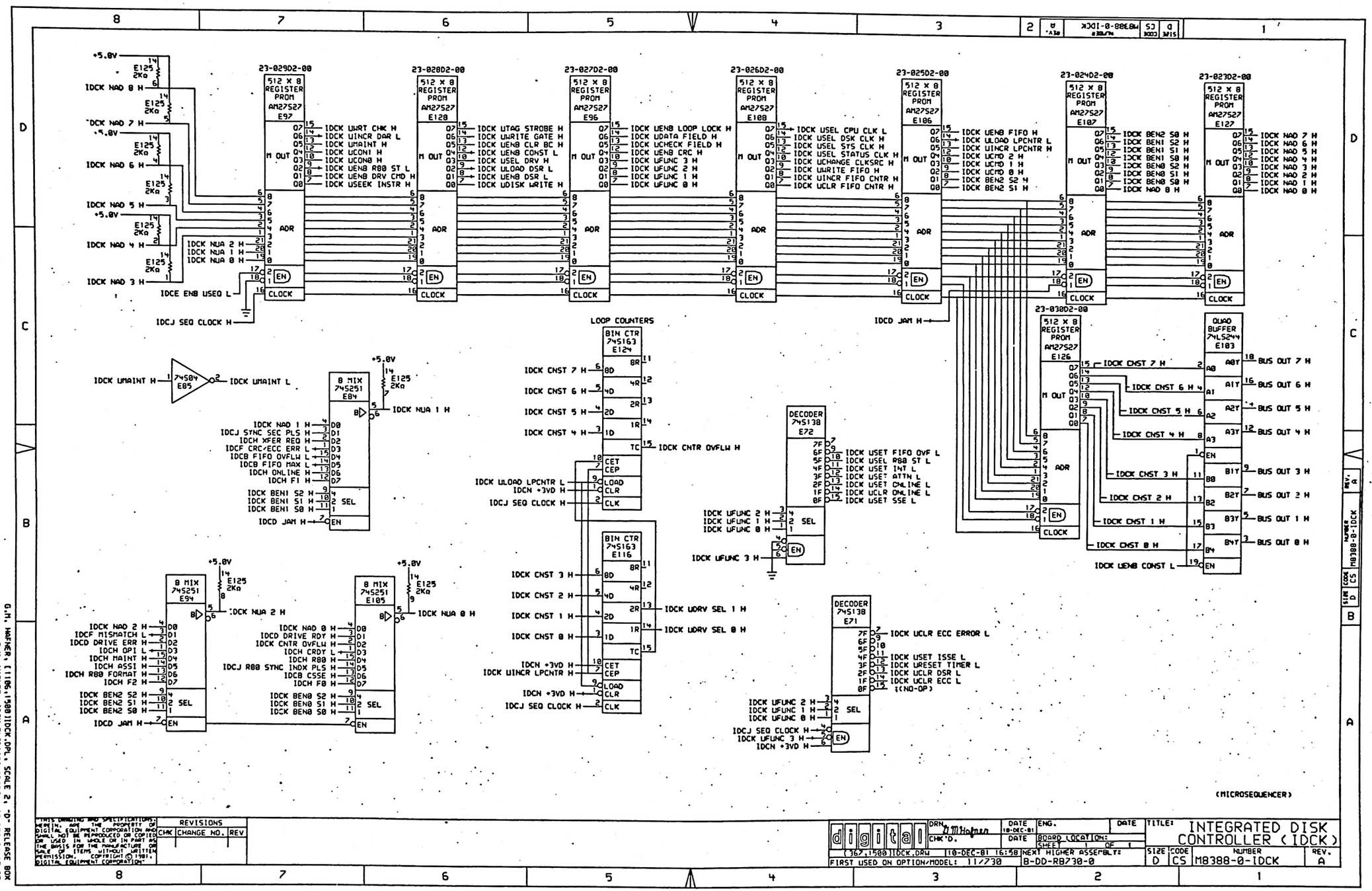
DRN		DATE	ENG. / DATE
CHK'D.		DATE	BOARD LOCATION:
			SHEET 1 OF 1

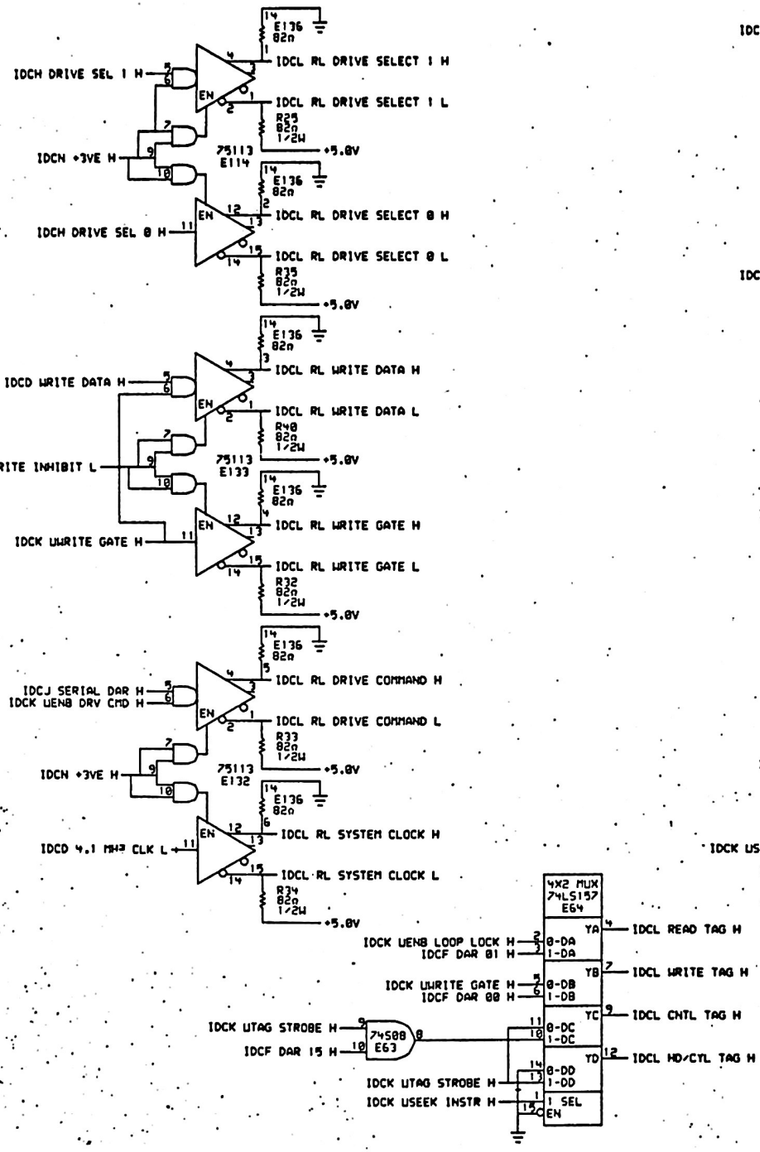
C367,1500]IDCJ.DRW 10-DEC-81 16:58 NEXT HIGHER ASSEMBLY: B-DD-RB730-0
FIRST USED ON OPTION/MODEL: 11/730

TITLE: INTEGRATED DISK CONTROLLER (IDCJ)

SIZE	CODE	NUMBER	REV.
D	CS	M8388-0-IDCJ	A

D.H. MARKER [1186,1500]IDCJ.DPL, SCALE 2, "D" RELEASE BOX
D.H. MARKER IDCJ.PLO[1186,1500] 10-DEC-81 17:32


23-029D2-00
512 X 8 REGISTER PROM AM27S27 E97
23-028D2-00
E128
23-027D2-00
E96
23-026D2-00
E108
23-025D2-00
E106
23-024D2-00
E107
23-023D2-00
E127
23-030D2-00
E126
+5.0V
E125 2KΩ
IDCK NAD 8 H
IDCK NAD 7 H
IDCK NAD 6 H
IDCK NAD 5 H
IDCK NAD 4 H
IDCK NAD 3 H
IDCK NUA 2 H
IDCK NUA 1 H
IDCK NUA 0 H
IDCE ENB USEQ L
IDCJ SEQ CLOCK H
IDCK UWRT CHK H
IDCK UINCR DAR L
IDCK UMAINT H
IDCK UCON1 H
IDCK UCON0 H
IDCK UENB R80 ST L
IDCK UENB DRV CMD H
IDCK USEEK INSTR H
IDCK UTAG STROBE H
IDCK UWRITE GATE H
IDCK UENB CLR BC H
IDCK UENB CONST L
IDCK USEL DRV H
IDCK ULOAD DSR L
IDCK UENB DSR L
IDCK UDISK WRITE H
IDCK UENB LOOP LOCK H
IDCK UDATA FIELD H
IDCK UCHECK FIELD H
IDCK UENB CRC H
IDCK UFUNC 3 H
IDCK UFUNC 2 H
IDCK UFUNC 1 H
IDCK UFUNC 0 H
IDCK USEL CPU CLK L
IDCK USEL DSK CLK H
IDCK USEL SYS CLK H
IDCK USEL STATUS CLK H
IDCK UCHANGE CLKSRC H
IDCK UWRITE FIFO H
IDCK UINCR FIFO CNTR H
IDCK UCLR FIFO CNTR H
IDCK UENB FIFO H
IDCK ULOAD LPCNTR L
IDCK UINCR LPCNTR H
IDCK UCMD 2 H
IDCK UCMD 1 H
IDCK UCMD 0 H
IDCK BEN2 S2 H
IDCK BEN2 S1 H
IDCK BEN1 S2 H
IDCK BEN1 S1 H
IDCK BEN1 S0 H
IDCK BEN0 S2 H
IDCK BEN0 S1 H
IDCK BEN0 S0 H
IDCK NAD 8 H
IDCK NAD 7 H
IDCK NAD 6 H
IDCK NAD 5 H
IDCK NAD 4 H
IDCK NAD 3 H
IDCK NAD 2 H
IDCK NAD 1 H
IDCK NAD 0 H
IDCD JAM H
ADR
EN
CLOCK
LOOP COUNTERS
8 BIN CTR 74S163 E124
IDCK CNST 7 H
IDCK CNST 6 H
IDCK CNST 5 H
IDCK CNST 4 H
IDCK CNST 3 H
IDCK CNST 2 H
IDCK CNST 1 H
IDCK CNST 0 H
IDCK CNTR OVFLW H
IDCK ULOAD LPCNTR L
IDCN +3VD H
IDCJ SEQ CLOCK H
BIN CTR 74S163 E116
IDCK UDRV SEL 1 H
IDCK UDRV SEL 0 H
IDCK UMAINT H
74S04 E85
IDCK UMAINT L
8 MIX 74S251 E84
IDCK NUA 1 H
IDCJ SYNC SEC PLS H
IDCH XFER REQ H
IDCF CRC/ECC ERR L
IDCB FIFO OVFLW L
IDCB FIFO MAX L
IDCH ONLINE H
IDCH F1 H
IDCK BEN1 S2 H
IDCK BEN1 S1 H
IDCK BEN1 S0 H
SEL
8 MIX 74S251 E94
IDCK NUA 2 H
IDCF MISMATCH L
IDCD DRIVE ERR H
IDCH OP1 L
IDCH MAINT H
IDCH ASS1 H
IDCH R80 FORMAT H
IDCH F2 H
IDCK BEN2 S2 H
IDCK BEN2 S1 H
IDCK BEN2 S0 H
8 MIX 74S251 E105
IDCK NUA 0 H
IDCK NAD 0 H
IDCD DRIVE RDY H
IDCK CNTR OVFLW H
IDCH CRDY L
IDCH R80 H
IDCJ R80 SYNC INDX PLS H
IDCB CSSE H
IDCH F0 H
IDCK BEN0 S2 H
IDCK BEN0 S1 H
IDCK BEN0 S0 H
DECODER 74S138 E72
IDCK USET FIFO OVF L
IDCK USEL R80 ST L
IDCK USET INT L
IDCK USET ATTN L
IDCK USET CMLINE L
IDCK UCLR ONLINE L
IDCK USET SSE L
IDCK UFUNC 2 H
IDCK UFUNC 1 H
IDCK UFUNC 0 H
IDCK UFUNC 3 H
DECODER 74S138 E71
IDCK UCLR ECC ERROR L
IDCK USET ISSE L
IDCK URESET TIMER L
IDCK UCLR DSR L
IDCK UCLR ECC L
(NO-OP)
IDCJ SEQ CLOCK H
IDCK UFUNC 3 H
IDCN +3VD H
QUAD BUFFER 74LS244 E103
IDCK CNST 7 H
IDCK CNST 6 H
IDCK CNST 5 H
IDCK CNST 4 H
IDCK CNST 3 H
IDCK CNST 2 H
IDCK CNST 1 H
IDCK CNST 0 H
IDCK UENB CONST L
BUS OUT 7 H
BUS OUT 6 H
BUS OUT 5 H
BUS OUT 4 H
BUS OUT 3 H
BUS OUT 2 H
BUS OUT 1 H
BUS OUT 0 H
(MICROSEQUENCER)
DRN. M Hafner
CHK'D.
DATE 10-DEC-81
ENG.
BOARD LOCATION:
SHEET 1 OF 1
NEXT HIGHER ASSEMBLY: B-DD-RB730-0
FIRST USED ON OPTION/MODEL: 11/730
TITLE: INTEGRATED DISK CONTROLLER (IDCK)
SIZE D | CODE CS | NUMBER M8388-0-IDCK | REV. A
REVISIONS
CHK | CHANGE NO. | REV
(367,1500)IDCK.DRW 10-DEC-81 16:58
G.M. HAFNER, [1106,1500]IDCK.OPL, SCALE 2, "D" RELEASE BOX
G.M. HAFNER IDCK.PLO[1106,1500] 10-DEC-81 17:37



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REVISIONS		
CHK	CHANGE NO.	REV

digital

DRN M.M.Hofmann — DATE 10-DEC-81 — ENG. — DATE

CHK'D. — DATE — BOARD LOCATION: SHEET 1 OF 1

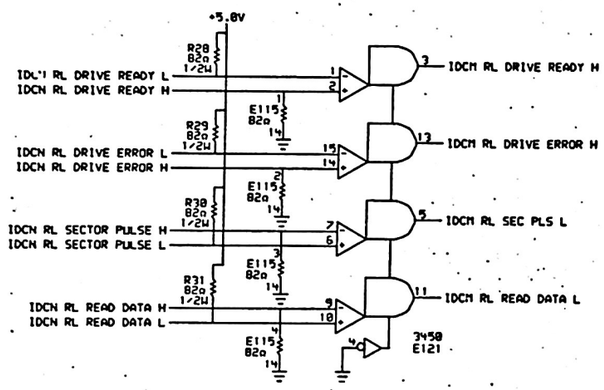
(162,1500)IDCL.DRW 10-DEC-81 16:58 — NEXT HIGHER ASSEMBLY: B-DD-RB730-0

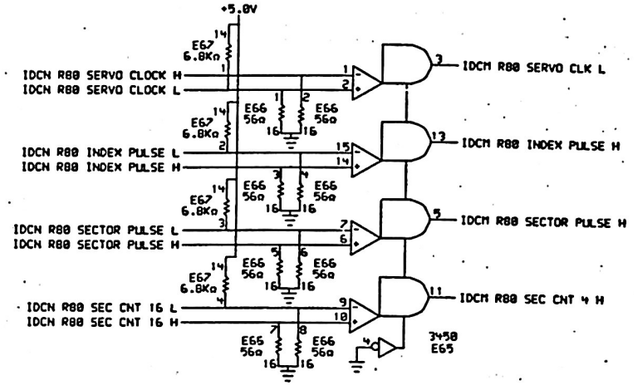
FIRST USED ON OPTION/MODEL: 11/730

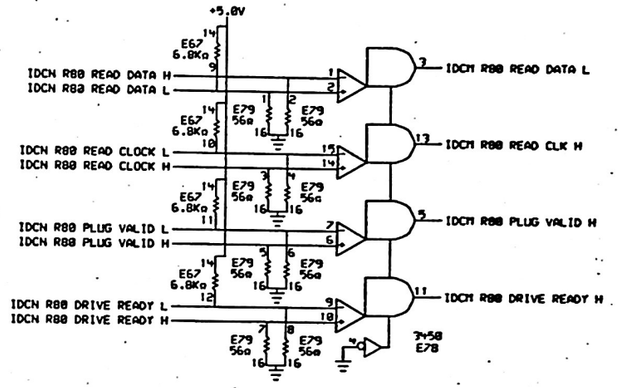
TITLE: INTEGRATED DISK CONTROLLER (IDCL)

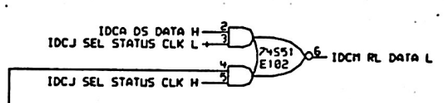
SIZE	CODE	NUMBER	REV.
D	CS	M8388-0-IDCL	A

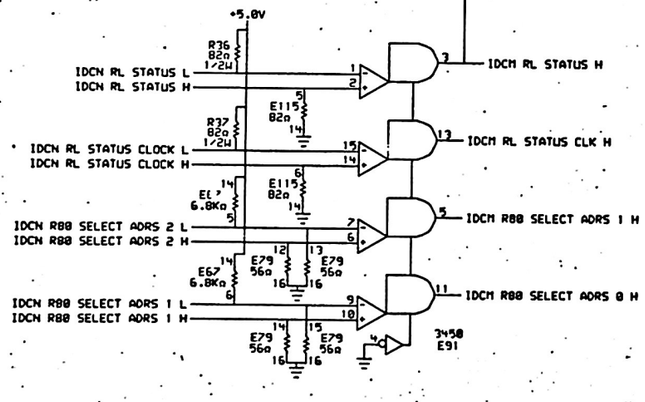
G.M. HAFNER [1106,1500]IDCL.DPL, SCALE 2, "D" RELEASE BOX
G.M. HAFNER IDCL.PLO[1106,1500] 10-DEC-81 17:38

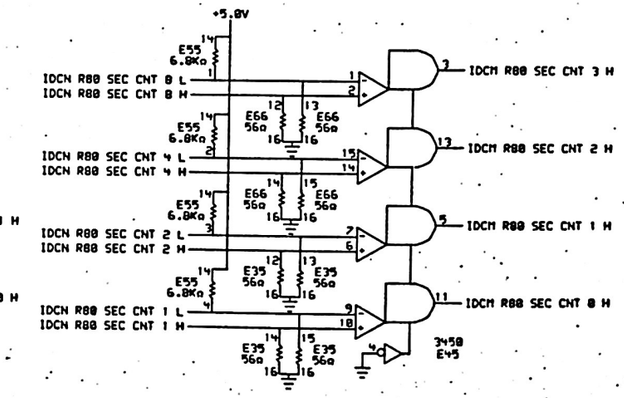


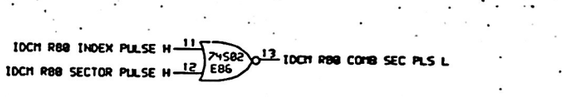


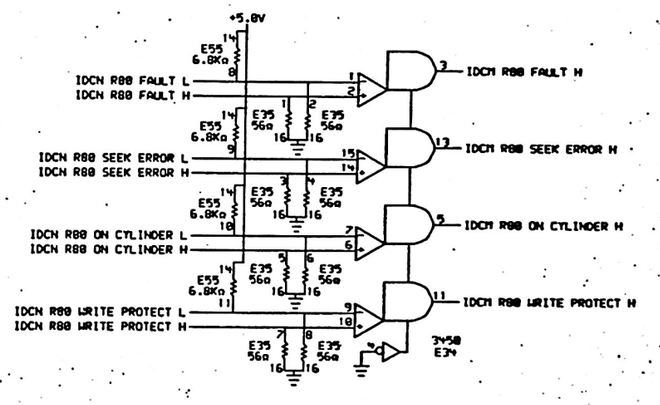












(RL02/R80 RECEIVERS)
(NOTE: 56Ω & 6.8KΩ RESISTORS ARE 13-00005 RES PACKS)

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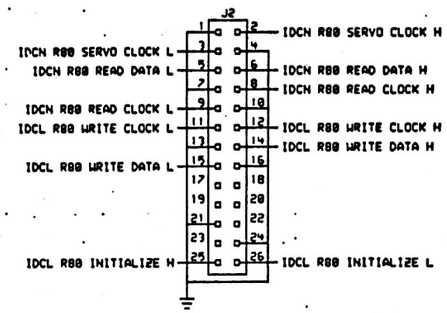
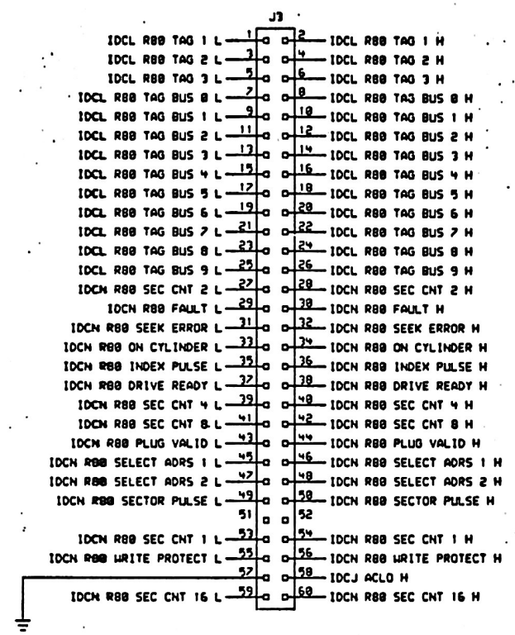
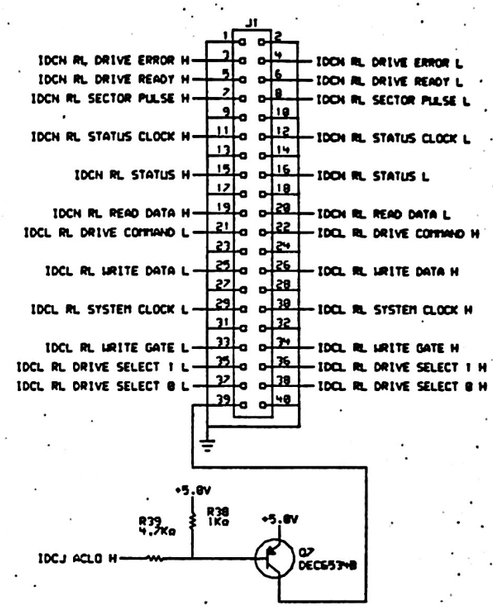
REVISIONS		
CHK	CHANGE NO.	REV

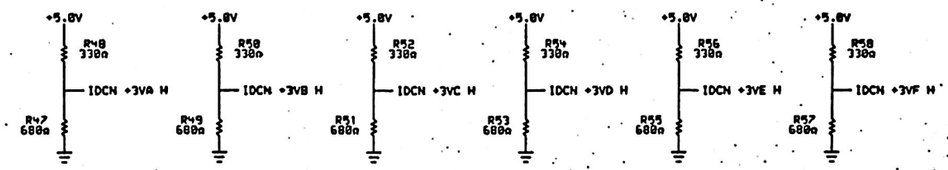
DRN		DATE	ENG.	DATE	TITLE: INTEGRATED DISK CONTROLLER (IDCM)
CHK 'D.		DATE	BOARD LOCATION:		
(367,1500)IDCM.DRW	10-DEC-81 16:59	NEXT HIGHER ASSEMBLY:		SHEET 1 OF 1	
FIRST USED ON OPTION/MODEL: 11/730		B-DD-RB730-0		SIZE D / CODE CS / NUMBER M8388-0-IDCM / REV. A	

G.H. HAFNER [1196,1500]IDCM.DPL; SCALE 2, "D" RELEASE BOX
G.H. HAFNER IDCM.PLOT[1196,1500] 10-DEC-81 17:38









(DISK CABLE CONNECTORS)
3V DIVIDER NETWORKS)

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REVISIONS		
CHK	CHANGE NO.	REV

DRN: A.M.Hofmann	DATE: 18-DEC-81	ENG.	DATE
CHK'D.	DATE	BOARD LOCATION: SHEET 1 OF 1	
[367,1500]IDCN.DRW 18-DEC-81 16:59		NEXT HIGHER ASSEMBLY:	
FIRST USED ON OPTION/MODEL: 11/730		B-DD-RB730-0	

TITLE: INTEGRATED DISK CONTROLLER (IDCN)

SIZE	CODE	NUMBER	REV.
D	CS	M8388-0-IDCN	A

G.H. HAFNER, [1196,1500]IDCN.DPL, SCALE 2, "J" RELEASE BOX
G.H. HAFNER IDCN.PLX[1196,1500] 18-DEC-81 17:38

8	7	6	5	4	3	2	1

REV.	NUMBER	SIZE	CODE	NUMBER
A	M8388-8-IDCP	D	CS	M8388-8-IDCP

+5.0V

C20 10µF 35V
C21 10µF 35V
C22 10µF 35V
C23 10µF 35V
C24 10µF 35V
C25 10µF 35V
C26 .047µF 50V
C27 .047µF 50V
C28 .047µF 50V
C29 .047µF 50V
C30 .047µF 50V
C31 .047µF 50V
C32 .047µF 50V
C33 .047µF 50V
C34 .047µF 50V
C35 .047µF 50V
C36 .047µF 50V
C37 .047µF 50V
C38 .047µF 50V
C39 .047µF 50V

AA2 AV1 BA2 BV1 CA2 CV1 DA2 DV1 EA2 EV1 FA2 FV1

AC2 AT1 BC2 BT1 CC2 CM1 CN2 CT1 DC2 DM1 DN2 DT1 EC2 EM1 EN2 ET1 FC2 FM1 FN2 FT1

+5.0V

C40 .047µF 50V
C41 .047µF 50V
C42 .047µF 50V
C43 .047µF 50V
C44 .047µF 50V
C45 .047µF 50V
C46 .047µF 50V
C47 .047µF 50V
C48 .047µF 50V
C49 .047µF 50V
C50 .047µF 50V
C51 .047µF 50V
C52 .047µF 50V
C53 .047µF 50V
C54 .047µF 50V
C55 .047µF 50V
C56 .047µF 50V
C57 .047µF 50V
C58 .047µF 50V
C59 .047µF 50V

+5.0V

C60 .047µF 50V
C61 .047µF 50V
C62 .047µF 50V
C63 .047µF 50V
C64 .047µF 50V
C65 .047µF 50V
C66 .047µF 50V
C67 .047µF 50V
C68 .047µF 50V
C69 .047µF 50V
C70 .047µF 50V

(IDC BYPASS/FILTER CAPS)

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REVISIONS		
CHK	CHANGE NO.	REV

DRN: M Hafner	DATE: 18-DEC-81	ENG.	DATE
CHK'D.	DATE	BOARD LOCATION: SHEET 1 OF 1	

(367,1500) IDCP.DRW 18-DEC-81 16:59 NEXT HIGHER ASSEMBLY: B-DD-RB730-0

FIRST USED ON OPTION/MODEL: 11/730

TITLE: INTEGRATED DISK CONTROLLER (IDCP)

SIZE	CODE	NUMBER	REV.
D	CS	M8388-0-IDCP	A

G.M. HAFNER [1186,1500]IDCP.DPL, SCALE 2, "D" RELEASE BOX
G.M. HAFNER IDCP.PLO[1186,1500] 18-DEC-81 17:59

DIGITAL EQUIPMENT CORPORATION
MAYNARD, MASSACHUSETTS

PARTS LIST

MADE BY F. Carberry DATE 2 JUN 76	CHECKED F. Carberry DATE 2 JUN 76	SECTION 1
ENG Alison Fiske DATE 12 Apr 77	PROD R.J. Scott DATE 12 APR 77	ISSUED SECT. 1

ITEM NO.	DWG NO. / PART NO.	DESCRIPTION	QUANTITY / VARIATION
1	1212691-00	PLUG,UNIT SELECT (Ø)	1
2	1212691-01	PLUG,UNIT SELECT (1)	1
3	1212691-02	PLUG,UNIT SELECT (2)	1
4	1212691-03	PLUG,UNIT SELECT (3)	1
	NOTE:	THE ABOVE ITEMS SHALL BE BAGGED	
		TOGETHER TO FORM A KIT	

TITLE	ASSY NO.	SIZE	CODE	NUMBER	REV.	ECO NO.
UNIT SELECT PLUG KIT		A	PL	7012938-0-0	*	
	SHEET 1 OF 1	DIST.				

DEC FORM DEC 16-(325)-1031-N870
DRA 110